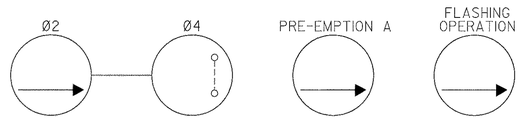
FHWA REGION NO	STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
3	MD.	STPG-218-1(7)E	31	66

PHASING DIAGRAM

U.S. 40 EAST (WEST WASHINGTON STREET) IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

	1	2	3	4	
PHASE 2	G	G	DW	DW	→
2 CHANGE	Y	Y	DW	DW	
PHASE 4	R	R	W	W	↑
4 PED. CLEAR	R	R	FL DW	FL DW	H
4 CHANGE	R	R	DW	DW	
PRE-EMPTION A	G	G	DW	DW	→
A CHANGE	Y	Y	DW	DW	
FLASHING OPERATION	FL Y	FL Y	DARK	DARK	→

NEMA PHASING



PHASING NOTES:
1. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY
2. PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY

EQUIPMENT LISTS

A. EQUIPMENT TO BE SUPPLIED BY THE SHA.

ITEM NO.	QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
9003	1	EA	SP	BASE MOUNTED LOCAL CABINET (SIZE 5) LESS DETECTION EQUIPMENT WITH 8 PHASE ASC II CONTROLLER WITH TELEMETRY AND OPTICOM PRE-EMPTION MODULE
9006/9007	9	SF	813	FLAT SHEET ALUMINUM SIGNS CONSISTING OF: – 1 EACH W11-2a (36" X 36")-MAST ARM MOUNT

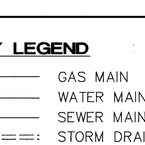
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

QUANTITY	UNIT	SPECIFICATION SECTION	DESCRIPTION
3	CY	205	TEST PIT EXCAVATION
5	CY	206	REMOVAL OF EXISTING SIDEWALK
60	LF	SP 555	12 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
40	LF	SP 555	24 INCH WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE
100	LF	SP	REMOVE EXISTING PAVEMENT MARKINGS-ANY WIDTH
325	SF	610	4 INCH CONCRETE SIDEWALK
350	SF	SP	REMOVE AND REPLACE EXISTING BRICK SIDEWALK
1	EA	816	INSTALL CONTROLLER AND CABINET-BASE MOUNT
9	SF	813	INSTALL OVERHEAD SIGN
2	EA	SP	FURNISH AND INSTALL 12 INCH 1 WAY 3 SECTION (R, Y, G) SIGNAL HEAD HAVING PROPER ADJUSTABLE MAST ARM BRACKET, AND TUNNEL VISORS-PAINTED BLACK
2	EA	SP	FURNISH AND INSTALL 12 INCH 1 WAY 2 SECTION PEDESTRIAN SIGNAL HEAD-PEDESTAL TOP MOUNT-PAINTED BLACK
1	EA	SP	FURNISH AND INSTALL OPTICOM DETECTOR EYE-MODEL 521
3	EA	811	FURNISH AND INSTALL ELECTRICAL HANDHOLE
5	CY	801	FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION
150	LF	805	FURNISH AND INSTALL 2" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
35	LF	805	FURNISH AND INSTALL 4" SCHEDULE 40 RIGID PVC CONDUIT-TRENCHED
225	LF	805	FURNISH AND INSTALL 2" SCHEDULE 80 RIGID PVC CONDUIT-SLOTTED
1	EA	807	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
2	EA	817	FURNISH AND INSTALL PUSHBUTTON AND SIGN
1	EA	SP	FURNISH AND INSTALL 27-FOOT STEEL POLE WITH A SINGLE 38-FOOT MAST ARM-PAINTED GREEN
1	EA	SP	CUT, CLEAN AND CAP TRAFFIC SIGNAL STRUCTURE
1	EA	SP	AS-BUILT FOR TRAFFIC SIGNAL
1	EA	806	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE WITH PHOTOCELL
1	EA	SP	FURNISH AND INSTALL 10 FOOT LIGHTING ARM ON SIGNAL STRUCTURE-PAINTED GREEN
2	EA	804	FURNISH AND INSTALL GROUND ROD-3/4 INCH DIAMETER X 10-FOOT LENGTH
140	LF	810	FURNISH AND INSTALL NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
325	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-1 CONDUCTOR (NO. 4 AWG – THHN/THWN)
150	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-2 CONDUCTOR (NO 14 AWG)
175	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-3 CONDUCTOR (NO 14 AWG)
175	LF	810	FURNISH AND INSTALL ELECTRICAL CABLE-5 CONDUCTOR (NO 14 AWG)
150	LF	810	FURNISH AND INSTALL 2-CONDUCTOR TRAY CABLE (NO 12 AWG)
2	EA	SP	FURNISH AND INSTALL 10-FOOT BREAKAWAY PEDESTAL POLE-PAINTED GREEN
150	LF	810	FURNISH AND INSTALL OPTICOM M-138 DETECTOR CABLE
3	EA	SP	REMOVE AND DISPOSE OF EXISTING FOUNDATION 12" BELOW GRADE
1	LS	SP	DELIVERY OF SALVAGED EQUIPMENT
1	LS	SP	REMOVE AND DISPOSE OF EXISTING EQUIPMENT
1	LS	SP	REMOVAL OF EXISTING SIGNAL EQUIPMENT TO BE SALVAGED

NOTE: ALL EQUIPMENT AND/OR MATERIALS TO BE REMOVED BY THE CONTRACTOR, BUT NOT LISTED BELOW, SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

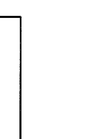
QUANTITY	UNIT	DESCRIPTION
1	EA	CONTROLLER AND CABINET
2	EA	PEDESTAL POLE AND BASE

SIGNALS



→ – OPTICAL PRE-EMPTION DETECTOR EYE

SIGNS

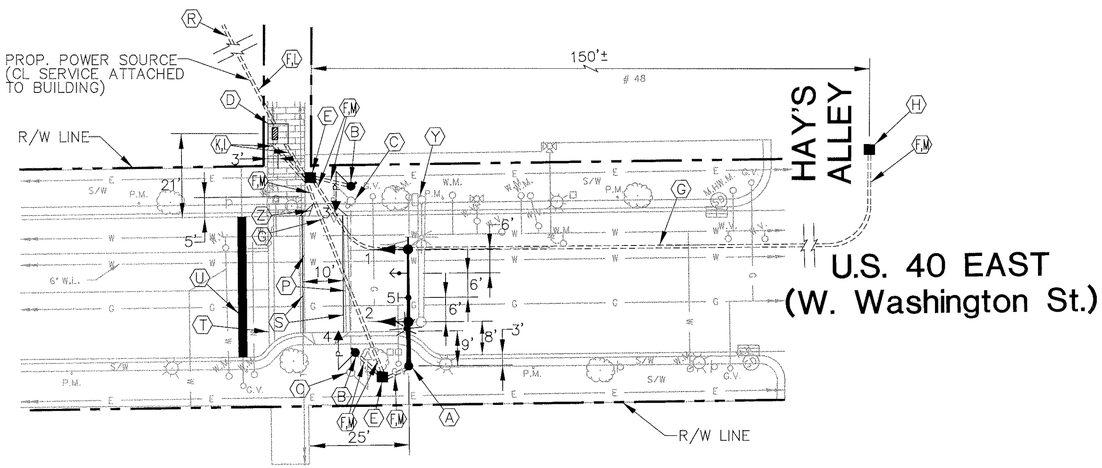


CONSTRUCTION DETAILS

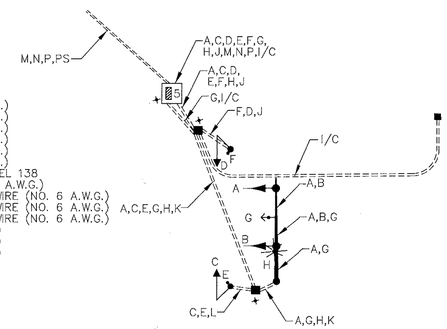
1. INSTALL 27' STEEL POLE, 32' MAST ARM, SIGNAL HEADS, SIGNS, 10' STREET LIGHTING ARM AND 250 WATT H.P.S. (CUTOFF) LUMINAIRE WITH PHOTOELECTRIC CELL, OPTICOM DETECTOR, PEDESTRIAN SIGNALS, PUSHBUTTON AND SIGN (NOTE: 1–2", 90–DEGREE P.V.C. BEND).
2. INSTALL 10' STEEL PEDESTAL POLE, PEDESTRIAN SIGNAL, PUSHBUTTON AND SIGN (NOTE: 1–2" 90 DEGREE P.V.C. BEND)
3. REMOVE EXISTING PEDESTAL POLE, PEDESTRIAN SIGNAL, PUSHBUTTON AND FOUNDATION.
4. INSTALL BASE–MOUNTED CABINET, SIZE #5, AND CONTROLLER WITH ALL NECESSARY EQUIPMENT AS SHOWN (NOTE: 2–4", 90–DEGREE P.V.C. BENDS; AND 2–2", 90–DEGREE P.V.C. BENDS).
5. INSTALL HANDHOLE.
6. INSTALL 2" P.V.C. (SCHEDULE 40) ELECTRICAL CONDUIT (TRENCHED).
7. INSTALL 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (SLOTTED).
8. USE EXISTING HANDHOLE.
9. INSTALL 4" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (SLOTTED).
10. REMOVE AND REPLACE EXISTING BRICK SIDEWALK.
11. REMOVE AND REPLACE EXISTING CONCRETE SIDEWALK.
12. REMOVE EXISTING CROSSWALK LINES.
13. INSTALL 10' OF 2" P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT – RISER ON SIDE OF BUILDING ADJACENT TO EXISTING RISER. COIL 25' OF ADDITIONAL CABLE.
14. INSTALL 12" SOLID WHITE LINE FOR CROSSWALKS.
15. REMOVE EXISTING STOP BAR.
16. INSTALL 24" SOLID WHITE LINE.
17. REMOVE EXISTING CONTROLLER, CABINET, STEEL POLE, MAST ARM, SIGNALS, LUMINAIRE, LIGHTING ARM AND FOUNDATION.
18. CONSTRUCT SIDEWALK RAMP

UTILITY LEGEND

G G	GAS MAIN
W W	WATER MAIN
S S	SEWER MAIN
	STORM DRAIN
TV TV	CABLE TELEVISION
E E	ELECTRIC CABLES
T T	TELEPHONE CABLES
A A	AERIAL CABLES



WIRING DIAGRAM



WIRING LEGEND

A – 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
B – 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
C – 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
D – 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
E – 2 CONDUCTOR CABLE (NO. 14 A.W.G.)
F – 2 CONDUCTOR CABLE (NO. 14 A.W.G.)
G – 3M OPTICOM DETECTOR CABLE, MODEL 138
H – 2 CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
J – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
K – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
L – STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
M – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
N – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
P – 1 CONDUCTOR CABLE (NO. 4 A.W.G.)
✦ – 3/4"x10' GROUND ROD
PS – PROPOSED ELECTRICAL SERVICE
I/C – INTERCONNECT CABLE

INTERSECTION DESCRIPTION

I. GENERAL

THIS INTERSECTION IS U.S. 40 EAST (WEST WASHINGTON STREET) AND THE PEDESTRIAN CROSSING AT HAY'S ALLEY. CONSTRUCTION AT THIS INTERSECTION INVOLVES THE RECONSTRUCTION OF THE EXISITNG TRAFFIC SIGNAL AND INTERCONNECTION WITH THE OTHER SIGNALIZED INTERSECTION IN THE NEW CITY–WIDE SYSTEM. IT IS ASSUMED THAT U.S. 40 EAST (WEST WASHINGTON STREET) RUNS IN A EAST–WEST DIRECTION.

II. INTERSECTION OPERATION

THE INTERSECTION WILL OPERATE IN A NEMA TWO (2) PHASE PEDESTRIAN ACTUATED MODE. WESTBOUND WASHINGTON STREET AND THE PEDESTRIAN CROSSING WILL OPERATE IN SEPERATE PHASES. THE PEDESTRIAN SIGNALS WILL OPERATE UPON PEDESTRIAN ACTUATION.

PRE–EMPTION ON EASTBOUND U.S. 40 EAST (WEST WASHINGTON STREET) WILL CALL PRE–EMPTION A.

A NEW EIGHT PHASE FULLY ACTUATED CONTROLLER WITH TELEMETRY MODULE, AND PRE–EMPTION HOUSED IN A GROUND MOUNTED CABINET WILL BE INSTALLED.

NOTE: EXISTING RIGHT–OF–WAY BASED ON INFORMATION PROVIDED BY THE CITY OF HAGERSTOWN.

REVISIONS

APPROVALS
CHIEF, SIGNAL DESIGN SECTION
ASST. DISTRICT ENGINEER, TRAFFIC
CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
DIRECTOR, OFFICE OF TRAFFIC & SAFETY

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 95–289

MDOT – STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION LOG MI. 2IE04036.02

DRAWN BY: M. GESELL
DES. BY: J. LAWRENCE
CHK. BY:

US 40 East (West Washington St.) at Hay's Alley / Market Place

COUNTY: WASHINGTON

DATE: 05/30/97
SCALE: 1" = 20'

F.A.P. NO. STPG–218–1(7)E
S.H.A. NO. WA9535185

TS NO. 3691

SHEET NO. 31 OF 66